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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,715	03/28/2006	Leonard Reiffel	HYDRA	2246
7590	01/25/2008		EXAMINER	
William J Hallihan 217 N Jefferson Street Suite 100 Chicago, IL 60661			KIKNADZE, IRAKLI	
			ART UNIT	PAPER NUMBER
			2882	
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			01/25/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/573,715	REIFFEL, LEONARD
	<b>Examiner</b>	<b>Art Unit</b>
	Irakli Kiknadze	2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 28 March 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-20 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 28 March 2006 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>3/28/2006</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 16 is objected to because of the following informalities: claim 16, in line 2, the recitation "inserting a magnetic field source inserted in a cavity" should read -- inserting a magnetic field source in a cavity--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites "the magnetic field having been changed to be substantially the same in the second, slice during the second exposure as in the first slice during the first exposure". It is unclear whether the magnetic field has changed from the first slice to the second slice.

Claim 20 is rejected by virtue of its dependence.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-10 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Reiffel (US Patent 5,974,112).

With respect to claims 1-9 and 12, Reiffel disclosed a product comprising a first magnetic field source and a second magnetic field source, which generate a magnetic field of at least one hundred gauss (an array of electromagnets, column 5, line 48 - column 6, line 9). Note: While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. The only structural elements claimed in claims 1-6 is a magnetic field source. Magnetic fields and a target volume in a body do not qualify as structural elements.

With respect to claims 10 and 12, Reiffel disclosed the product of claim 9, wherein at least one magnetic field source from the plurality of magnetic field sources is a superconducting electromagnet (column 5, lines 48-65).

With respect to claim 13, this claim fails to set forth additional structural limitation. Accordingly, it is rejected with claim 9.

With respect to claim 14, Reiffel disclosed a method of tailoring energy

deposition, the method comprising: providing a target volume having a target density; providing a body (23) having a body density proximal the target volume, wherein the target volume is in the body; providing a magnetic field (11); tailoring the magnetic field in a relationship with the body, the target volume, and a electron-photon cascade in the body produced by a photon beam (21), where the photon beam and the electron-photon cascade are substantially parallel to a beam path (column 3, lines 44 - 48), wherein the magnetic field has a component (102) non-parallel to the beam path in the target volume, which is at least one hundred gauss (column 5, line 48 - column 6, lines 9); and the tailoring relationship causing a desired distribution of energy deposited in the body and the target volume.

With respect to claim 15, Reiffel disclosed the method of claim 14, wherein the magnetic field has a component (102) orthogonal to the beam path in the target volume.

With respect to claims 16-18, Reiffel disclosed the method of claim 14, further comprising inserting a magnetic field source in a cavity in the body to produce the magnetic field (column 6, lines 57-59).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 11, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiffel (US Patent 5,974,112).

With respect to claim 11, Reiffel teaches claimed invention except for a flexible conduit to provide power and cooling needs to at least one magnetic field source from the plurality of magnetic field sources. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a flexible conduit to provide power and cooling needs to at least one magnetic field source from the plurality of magnetic field sources, since it was known in the art and a person would be motivated to provide a coolant (to lower the superconducting magnet to 2.2 degree K) and power to a superconducting electromagnet.

With respect to claims 19 and 20, Reiffel teaches claimed invention except for disclosing the method steps of sizing a first exposure of the photon beam so that it irradiates a first slice of the target volume parallel to the photon beam, and sizing a second exposure of the photon beam so that it irradiates a second slice of the target volume parallel to the photon beam, the magnetic field having been maintained substantially the same in the second slice during the second exposure as in the first slice during the first exposure. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to repeat the exposure, since a person would be motivated to repeat the exposure when the target volume is greater than the size of the photon beam.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Irakli Kiknadze  
Examiner  
Art Unit 2882

*IK*  
January 21, 2008